DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: SILVER LAKE	Lake Area (ha): 87.53
Town: TILTON	Maximum depth (m): 6.8
County: Belknap	Mean depth (m): 1.9
River Basin: Merrimack	Volume (m^3) : 1661000
Latitude: 43°27'55" N	Relative depth: 0.6
Longitude: 71°32'14" W	Shore configuration: 1.90
Elevation (ft): 464	Areal water load (m/yr): 622.0
Shore length (m): 6300	Flushing rate (yr^{-1}) : 328.0
Watershed area (ha):119139.4	P retention coeff.: < 0.01
<pre>% watershed ponded: 19.8</pre>	Lake type: natural

BIOLOGICAL:	15 February 1997	27 June 1996
DOM. PHYTOPLANKTON (% TOTAL) #1	NOT SAMPLED	ASTERIONELLA 50%
#2	(THIN ICE)	CERATIUM 15%
#3		OSCILLATORIA 8%
PHYTOPLANKTON ABUNDANCE (units/mL)		
CHLOROPHYLL-A (µg/L)		3.27
DOM. ZOOPLANKTON (% TOTAL) #1		NAUPLIUS LARVA 20%
#2		ASPLANCHNA 12%
#3		CYCLOPOID COPEPOD 12%
ROTIFERS/LITER		22
MICROCRUSTACEA/LITER		29
ZOOPLANKTON ABUNDANCE (#/L)		60
VASCULAR PLANT ABUNDANCE		Common/Abun
SECCHI DISK TRANSPARENCY (m)		5.0
BOTTOM DISSOLVED OXYGEN (mg/L)		8.5
BACTERIA (E. coli, #/100 ml) #1		2
#2		
#3		

SUMMER THERMAL STRATIFICATION:

not stratified

Depth of thermocline (m): None Hypolimnion volume (m³): None Anoxic volume (m³): None

CHEMICAL:		SILVER LAKE TILTON	
	15 February 1997	27 June 1996	
DEPTH (m)		2.0	4.0
pH (units)		6.7	6.7
A.N.C. (Alkalinity)		6.1	6.2
NITRATE NITROGEN		< 0.05	< 0.05
TOTAL KJELDAHL NITROGEN		0.22	0.17
TOTAL PHOSPHORUS		0.015	0.015
CONDUCTIVITY (µmhos/cm)		75.7	75.8
APPARENT COLOR (cpu)		9	9
MAGNESIUM			
CALCIUM		4.0	
SODIUM		8.7	
POTASSIUM		0.64	<u> </u>
CHLORIDE		12	12
SULFATE		5	5
TN : TP		15	11
CALCITE SATURATION INDEX		3.2	

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1996

I	0.0.	s.D.	PLANT	CHL	TOTAL	CLASS
	**	2	4	0	6	Meso.

COMMENTS:

- 1. Silver Lake was previously surveyed and classified in 1979. There was no change in trophic class and little change in water quality between the two dates. The exotic species of milfoil was discovered in the pond in 1995. It probably floated downstream from Lake Winnisquam.
- 2. The Winnipesaukee River flows through Silver Lake and is the reason for the rapid flushing rate.
- 3. No winter samples were collected because of open water and unsafe ice conditions.



FIELD DATA SHEET

LAKE: SILVER LAKE

DATE: 06/27/96

TOWN: TILTON

WEATHER: 70 F, PARTLY CLOUDY, WINDY

DEPTH	ТЕМР	*DISSOLVED	OXYGEN
(M)	(°C)	OXYGEN	SATURATION
0.1	21.0	8.8	97 %
1.0	21.0	8.7	96 %
2.0	20.5	8.7	94 %
3.0	20.0	8.6	93 %
4.0	20.0	8.6	93 %
5.0	20.0	8.6	93 %
6.0	20.0	8.5	93 %
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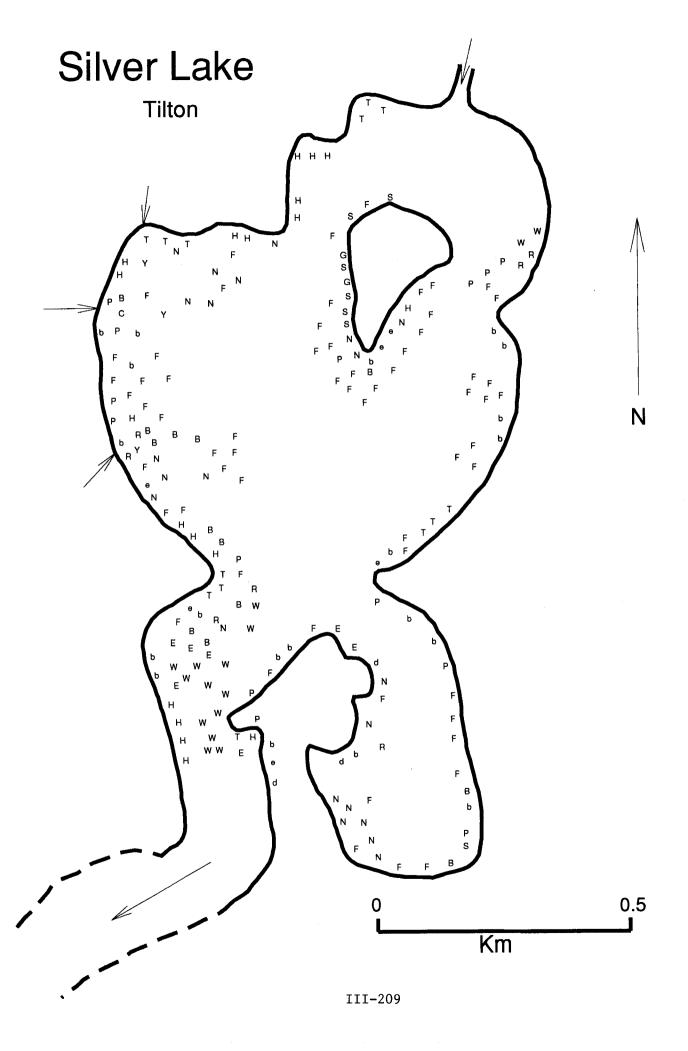
SECCHI DISK (m): 5.0

COMMENTS:

BOTTOM DEPTH (m): 6.5

TIME: 1230

*Dissolved oxygen values are in mg/L



AQUATIC PLANT SURVEY

TAV	E: SILVER LAKE	TOWN: TILTON	DATE: 06/27/96
LAN		ANT NAME	DATE: 06/2//96
Кеу	GENERIC		ABUNDANCE
		COMMON	
T	Typha	Cattail	Scattered
Н	Equisetum	Horsetail	Scattered
N	Nymphaea	White water lily	Scat/Common
F	Nymphoides cordatum	Floating heart	Common/Abun
В	Brasenia schreberi	Water shield	Scattered
Y	Nuphar	Yellow water lily	Sparse
P	Pontederia cordata	Pickerelweed	Scattered
b	Scirpus	Bulrush	Scattered
С	Cyperaceae	non-flowering sedge	Sparse
d	Dulichium arundinaceum	Three-way sedge	Scattered
S	Sparganium	Bur reed	Sparse
R	Potamogeton robbinsii	Robbins pondweed	Scattered
е	Eleocharis	Spike rush	Scattered
E	Elodea nuttallii	Waterweed	Scattered
W	Potamogeton	Pondweed	Scattered
G	Gramineae	Grass family	Scattered
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OVERALL ABUNDANCE: Common/Abun

GENERAL OBSERVATIONS:

- 1. Exotic milfoil, Myriophyllum heterophyllum, was treated with the herbicide 2,4-D in early June, 1996. It was not observed in the above plant survey.
- 2. Filamentous green algae was common along much of the bottom, particularly along the western shore.